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**SEALED AND SELF-CONTAINED TANKLESS
WATER HEATER FLUSHING SYSTEM****RELATED APPLICATION**

None

FIELD OF THE INVENTION

One aspect of the invention relates to a sediment or scale flushing system for removal of deposits, such as scale or sediment, from a tankless water heater, which system can also be used with other equipment, such as heat exchangers, boilers, condensers, and other equipment, wherein scale and sediment build-up is a problem.

BACKGROUND OF THE INVENTION

This section is intended to introduce the reader to various aspects of art that may be related to various aspects or embodiments of the present invention, which are described and/or claimed below. This discussion is believed to be helpful in providing the reader with background information to facilitate a better understanding of the various aspects and embodiments of the present invention. Accordingly, it should be understood that these statements are to be read in light of, and not as admissions of prior art.

Tankless water heaters, also called instantaneous or demand water heaters, provide hot water, as needed. Traditional storage water heaters experience standby energy losses that can be both expensive and time consuming because they are required to maintain a predetermined volume of hot water. Tankless water heaters only produce hot water when there is a demand. In operation, when a hot water tap of such heaters is turned on, cold water travels through a pipe into the tankless water heater. In an electric tankless water heater, an electric element heats the water directly. In a gas-fired tankless water heater, a gas burner is lit which heats the water. Tankless water heaters deliver a constant supply of hot water and do not require a storage tank for previously heated water. Tankless water heaters can be used in a number of situations that demand an instantaneous supply of hot water, including use with certain appliances, such as clothes washers or dish washers, and in other situations such as in kitchens, outdoor sinks, remote bathrooms or hot tubs.

One problem that has occurred with these tankless water heaters, especially in areas with hard water, is that minerals present within the water solidify and adhere to the sides of the piping, particularly copper piping, that is utilized within these tankless water heaters. These minerals, commonly calcium carbonate, condense within the piping of the tankless water heater, gradually reducing the flow of the water through the piping and thereby interfere with the normal operation of the tankless water heater. The result is an inefficient tankless water heating system and, if a large amount of buildup occurs, permanent damage to the tankless water heater system.

Currently, the piping of tankless water heater systems is cleaned utilizing open, flushing systems, wherein a solution of an acid, such as vinegar in water, is poured into an open bucket and is then pumped through the tankless water heater system for a sufficient period of time to remove the scale or other deposits from the piping. Unfortunately, many of these scale removal systems are cumbersome, difficult to use, subject to spills and create significant odor and irritation when used, especially indoors, because of the vapors generated by the acidic material. Further, these open scale removal systems

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can be troublesome and time consuming to use and require repeated use to remove substantially all of the sediment or scale.

These open scale removal systems also create significant risks to users, bystanders, and to the environment in which they are used. The system design of these prior art systems offers no protection against spills, splashing, or vapors given off by the acidic material. In addition, this acidic material can cause injury to the operator or bystanders, such as chemical burns to the skin, eyes, or lungs through inhalation. Also, spilled material poses a slip-and-fall hazard and can damage property, such as carpet, wood or vinyl flooring.

Prior art open scale removal systems also create a difficult storage challenge for end users. When not in use, the discharge hose of such system is often left secured to the pump to reduce the time required to hook up or unhook the system. The return hose is often placed loosely with the pump, usually in a bucket. The power cord is often wrapped around the pump and also placed in the bucket with the other hose. These systems give the end user few options for safe system storage without risking damage to the hoses, power cord, pump or the surrounding environment.

It is therefore one object to produce a sealed, preassembled, and self-contained recirculating system to remove scale and other sediment from tankless water heater systems without the problems of previous open systems.

It is a further object to produce a sealed, preassembled self-contained recirculating system for cleaning tankless water heater systems, which reduces the presence of unpleasant odors and the opportunity for the acidic liquid to spill during use.

It is a further object to provide a sealed, preassembled self-contained recirculating system for cleaning tankless water heater systems which can be monitored visually while in operation without opening the system.

It is a further object to provide a sealed, preassembled self-contained recirculating system for cleaning a tankless water heater system which can be reused, regardless of the quantity of scale and other sediments that are present in the tankless water heater system being cleaned.

It is a further object to provide a sealed, preassembled self-contained system for cleaning a tankless water heater system utilizing a filter to remove the scale and other sediment, which filter can be removed, cleaned and reused.

It is a further object to provide a sealed, preassembled self-contained system for cleaning a tankless water heater system with serviceable access connections in a holding basin and a cover lid for the purpose of filling and emptying an acidic solution without having to disassemble the tankless water heater flushing system.

It is a further object to provide a sealed, preassembled self-contained system for cleaning a tankless water heater system that is easy and safe for the end user to store and secure the hoses and power cord when not in use.

To accomplish these and other objects, a sealed and self-contained tankless water heater flushing system is provided comprising a holding basin, a cover lid for the holding basin secured to the holding basin, a submersible pump contained within the holding basin, a submersible pump hose system secured from the submersible pump to a discharge opening in the cover lid of the holding basin, a filter system secured within the holding basin to a filter opening in the cover of the holding basin, which filter system is an integral component of the flushing system, wherein the filter system includes a filter for filtering solid substances, such as scale or sediment, from the tankless water heater during a flushing procedure, a discharge hose for connecting the discharge opening to the tan-